

OBJECTIONS

TO

WATER - CLOSETS

ANSWERED.

Being the substance of a Paper read at the Social Science Association Meeting in Liverpool, 1858, and at a Meeting of the Manchester and Salford Sanitary Association, January 29th, 1869.

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Objections to Water Closets answered.

IT must appear strange, that 26 years after the publication of Mr. Chadwick's famous Report on "The Sanitary Condition of the Labouring Classes," 24 years after the enquiry by the Health of Towns' Commissioners, and notwithstanding all the subsequent experience and observation confirmatory of their conclusions, it should still seem necessary to shew that it is, on the whole, desirable that collections of putrefying filth, in immediate contiguity with dwellings, should not be permitted. The proposition is in itself so self-evident, that it is rather startling to find one of the most important corporations of England not merely maintaining the contrary; and not content with merely discouraging the introduction of water-closets, actually attempting to obtain powers from parliament to charge a prohibitory tax upon their use. Moreover, openly justifying that attempt by asserting that "the introduction of water-closets among the low-rented and confined tenements of the poor is for sanitary and other reasons objectionable."

The prevalence of such an opinion would be a most formidable obstruction to the particular sanitary improvement which in this* and the adjoining counties is especially required. It is, therefore, particularly important to seize this opportunity of refuting the fallacies by which the Corporation of Manchester have been misled.

* The substance of a Paper read at the Public Health Department of the Social Science Association meeting in Liverpool, 1858.

Strangers to Lancashire will be astonished to hear that the barbarous practice is defended of keeping for many months all the night soil and much other refuse in shallow uncovered pits close to dwellings, with nothing to prevent the stinking gases of putrefaction passing directly into the bed-room windows below which the middens are often necessarily placed. They will not, however, be surprised to learn that a large part of the excessive unhealthiness for which Manchester is notorious is attributed by those best qualified to judge to these abominations. The truth is, that Manchester, although to the eye tolerably clean, is in fact intolerably dirty. This has been angrily denied, but cannot be disproved. There are in it about thirty-thousand middens which are emptied about twice a year each, and there is removed from them about sixty-thousand tons of the filthiest of all filth. Nearly 200 of these "stink pits" are emptied every night. Their contents are first laid on the street previous to being carted away, the surface on which it is laid not being perfectly cleaned often continues offensive for days; the carts are annoying, and the depot of night soil is also a constant subject of complaint. How offensive these must be may be imagined by any who have passed near a field on which night soil has been spread as manure, how destructive of comfort the practice is those only can justly appreciate who have lived both in Manchester and in some places of decent civilization in this respect.

The objections chiefly insisted on as reasons for opposing the introduction of water-closets are: 1. That their introduction *into* the small tenements of the poor would be objectionable. 2. That their use causes a large waste of water. 3. That the soil if washed into the sewers chokes them. 4. That it makes the streams, into which they flow, very offensive. 5. That, if the night-soil be washed away, the ashes would be of no value, and their removal, therefore, very costly, and 6: That water-closets are constantly getting out of order.

I. That the introduction of water-closets into small tenements would be objectionable and dangerous.

One of the most common modes of obtaining an apparent victory over an antagonist is after misrepresenting his proposition to shew the absurdity of your own misrepresentation, and then claim the victory over him. No one has proposed to introduce these conveniences into the houses of the poor, and thereby compel such tenants, as it was expressed, to live in their water-closets, that is, to have water-closets in their living rooms. Nay, it was not proposed to *compel* the use of water-closets at all, but merely to allow those to erect them who wish to do so, and where they found them most convenient and least annoying. It is absurd to suppose that the owners of cottages would do what would be injurious to their own property by being annoying and dangerous to their tenants. Landlords will indeed often neglect to do what would be beneficial ; but it is very unlikely that they would voluntarily incur expense to do what would be injurious. The most usual course would be the simple conversion of the existing privies into closets, and to try to persuade anyone that this would be a change for the worse is hopeless indeed.

II.—The second objection was, that closets or soil-pans cause an excessive waste of water. An engineer is reported to have given in evidence, “I have no hesitation in saying, that with the common soil-pan now in vogue, and a constant supply of water the consumption of water would be doubled.” The consumption is stated to be from 12 to 15 gallons per head, *i.e.*, with five to a house, 60 to 80 gallons per house per diem ; and the witness tells us he has no hesitation in saying that such consumption would be doubled for each soil-pan. One almost is provoked to ask, after that, what is it he would hesitate to say ? Such an assertion is simply incredible to anyone who has ever used a soil-pan. I once took the trouble of ascertaining how much water one soil-pan did use and waste, about which no

particular trouble was taken either in its construction or use, and found it never consumed more than 9 gallons a day, and seldom more than 6. It was used by four persons. But, even supposing that closets do waste a great deal of water, there is no need why they should do so. Nothing can be much easier than to limit the supply to any extent desired, and it is evidently impossible that more water can run away than is supplied. It is true that persons of supposed eminence may be induced to assert that it is impossible to limit the supply, but we need pay little attention to the declarations of men who are called witnesses, but are really advocates for any party who will employ them. The wonder is that their evidence is thought worth paying for. He must, however, have a bold front who will deny that a little hole may be drilled in a vessel kept full of water, so small that it cannot discharge more than at the rate of say, 10 gallons a day, *i.e.*, 8 grains a second, or at about any other rate. If this be the *maximum* rate of discharge the *average* discharge must be less. If the supply be stopped when the little flushing cistern is filled, the consumption may probably be only 4 or 5 gallons a day, perhaps less, and cannot possibly exceed ten, or whatever rate is decided upon. If one or two gallons per diem for each individual using each water-closet be allowed, it is quite ample for the use and inevitable waste, if proper apparatus be used, the additional yearly cost of procuring an additional supply of one or two gallons per head per diem, would be paid for by an extra rate of a shilling per house. † It may be objected that the little hole allowing little more than a continuous dropping of water would be soon choked by a grain of sand, scale of rust, or other accidental solid matter in the water. This inconvenience is easily guarded against by using a small piece of filtering stone or gauze to intercept any

† Ten gallons per house per diem = $10 \times 365 = 3,650$ gallons, per annum, at 3d. per thousand, the price at which water is sold in bulk at Manchester,—not quite 11d. a year.

solid matter. If the water be as clean as it ought to be, a very long time must elapse before such filtering stone would become choked.

III.—The answer to the objection, that night-soil washed into the sewers would soon choke them, is, that such an evil has always been prophesied as a consequence of the introduction of water-closets, but the prophecy has never been fulfilled. The danger is purely imaginary, as a very little reflection will shew. The quantity of insoluble matter contained in excrement is very small, and that is very easily diffusible in water. If only a gallon of water be used for each person on an average, the proportion of solid matter in it would not exceed one-fortieth part, most of which would be dissolved. It is not night-soil but grit, and matters washed off the streets, bricks, hair, and sticks, which cause the obstruction of sewers. The introduction of water-closets, by increasing the amount and constancy of their flow, diminishes the chances of obstruction. It must be very evident that sewers which are liable to be quite dry for long periods, as those which convey no water but rains, are far more liable to get choked than those which are never dry, and in which the mud can never get hardened, if even allowed to deposit at all.

IV.—To the objection that the use of water-closets would cause pollution of the rivers into which the sewers are discharged, it is answered that sewers conveying anything but flood-water, or sewage when very diluted, ought not to be permitted to flow into rivers, whether they convey night-soil or not, but it is a less evil to permit this than to retain the night-soil in the immediate neighbourhood of dwellings. In the particular case of Manchester, the rivers are already so horribly offensive that it is difficult to imagine them worse. Polluting them would be something like “painting the lily, and adding perfume to the violet.”

Worse, however, the rivers must, of course, become if

still more filth be poured into them ; but that would, probably, quickly bring about the remedy, which must sooner or later be adopted, of diverting the sewage from the rivers altogether, and applying it to its legitimate purpose, the fertilization of the land. But, it may be replied, this great work cannot be immediately accomplished, and in the meantime great injury will be inflicted by adding to the present pollution of the water. Granted that a little evil may be done, much greater injury is endured by permitting the continuance of collections of filth close to houses. To wash it into the rivers would not be, as was stated, simply removal from one place to another, but from thirty-thousand places, close to houses, to a river at considerable distance from most of them. In the middens it is kept for months putrefying and poisoning the air, close to the windows of bedrooms. In the river it need not remain for so many hours. If so, there would not be one thousandth part of the quantity at any one time in the stream *within the town*, as there now is in the middens. There would, therefore, be far less filth at a far greater distance in a less injurious state, even supposing the very objectionable plan of pouring the sewage into the rivers to be continued.

The same quantity, or surface of filth, at a considerable distance, does almost infinitely less mischief than when close at hand. If the diffusion of emanations be similar to the diffusion of vapour, and in still air equal in all directions, except downwards (where prevented by the ground), the emanations will fill a hemisphere of air of which the collection of filth is the centre. If so, the injury done must be less in proportion to half the square of the distance from the centre. According to this rule the filth of 1,000 houses 1,000 yards distant, may not be one-five-hundredth part as injurious as the filth of one house one yard off, for one thousand divided by half the square of 1,000 is only 1.500 part. Whether this be the correct rule or not, it is certain that the removal of filth, even to a small

distance, does very considerably diminish its poisonous effect, for we find that the inhabitants of towns, which are closely built, and have the middens close to the houses, suffer very much more severely than other towns in which they are as numerous in proportion, but somewhat removed from immediate proximity to dwellings. This explains the excess of mortality in a place like Manchester above that in similar towns, with similar climate, similar employment, similar dwellings, worse in some sanitary conditions, but less bad in the very important respect of having a greater interval between the houses and their collections of filth. It must, however, be remarked that, in all the places in which these “admitted abominations” are common, the death-rate is very high: they differ from each other only in degrees of badness.

An attempt has been made, but with very ill-success, to persuade the public of London that the abolition of its cesspools before the diversion of its sewage from the Thames was an unwise proceeding. It is quite true that sewage in the Thames is occasionally, though but rarely, a grievous nuisance; but the present evil is not to be compared with that which has been superceded. To talk of the annoyance of the Thames to London as greater than that occasioned by the middens of Manchester is too ridiculous. In the first place, to almost the whole of Londoners the change is an unmixed benefit. They are greatly relieved from the old nuisance, and do not all experience the new, while to the small portion who live near enough to the Thames to be annoyed (for the smell at the worst extended a very little way), the annoyance was not greater than all formerly were subjected to; those only who lived actually on the river, or its very banks, suffered more than they formerly did. Recollect, also, that the increased pollution of the Thames is not chiefly owing to the abolition of cesspools. If those collections of poisonous filth were permitted the river would nevertheless receive all sorts of impurities

washed off the streets, from stables, cowsheds, urinals, slaughter-houses, slop-stones, tanneries, and many workshops and manufactoryes, yielding offensive refuse.

V.—It has been very confidently asserted that the poor could not manage water-closets, and that experience proved they would be constantly getting out of order. No particular experience was, however, referred to ; and it is not an unnatural suspicion that the assertion was based only upon a belief of what would be, not an observation of what had been. It is one of the commonest fallacies of the class who pride themselves upon being “ practical men ” (which generally means men who do not believe anything which has not fallen under their own very limited observation) to assert that that cannot answer which they have never seen fairly tried. That water-closets for the poor are found to answer may be proved ; first, by the testimony of those who have observed their operation on a very extensive scale ; secondly by their large and increasing sale. Mr. Creasy, for instance, says, he has had some thirteen thousand soil-pans put up in the poorest districts of London, and that their use has been attended with scarcely any trouble, and Messrs. Doulton, of Lambeth, say their own make of soil-pans is 400 a week, and estimate the total make at 6,000 to 7,000 a week, that is at the rate of 300,000 to 350,000 a year. It is mere idleness to say that articles manufactured in such numbers are found unfit for their use. It would be as hopeless a task to convince any man of sense of this, as it would be to persuade a Manchester manufacturer that calico is unfit for clothing.

It is very probable that some difficulty may be experienced with the soil-pans used by several families and accessible to strangers ; and when it is impossible to adopt the proper course of providing each family with its own, possibly the best plan may be not to use soil-pans, but the troughs partially filled with water and emptied and re-filled daily,

which are used in some prisons, hospitals, and poor-houses. These are, however, for exceptional cases ; and it is a question whether their trouble and cost would not exceed that of providing for each family that which the comfort and decency of each requires—that which is emphatically called a “necessary” or a “privy.”

VI.—A strong point was made of the enormous cost it was alleged must be incurred for removing house refuse, if its value as manure should be reduced or destroyed by its being deprived of its night-soil. As this, if true, in Manchester, must be true generally, it seems worth examination. It was proved that the cost of removing in one year 95,548 tons of night-soil and refuse was £16,259, that it was sold for £9,110, leaving a net expenditure of £7,149. The question is, would that expenditure be increased at all, or so much as to over-balance the advantage of washing away the night-soil instead of retaining it to sell at so great a loss.

In the first place, it is very evident that there would be very much less weight of refuse to remove, if it consisted of little else than dry ashes, that, if it were less offensive, it might be removed at all times of the day, as it is in London, and night-work, which is always expensive, be avoided ;—and that the extra pay, which men generally want to reconcile them to very nasty employment, might be diminished. It is very probable that, instead of 95,000 of wet soil, not 60,000 tons of dry ashes would have to be removed, at a cost, instead of about 3s. 4d. a ton, of not above 2s. a ton for labour and carting. If so, the gross cost, instead of £16,259, would be only £6,000 ; and, even supposing the ashes to be absolutely of no value, the loss would be not more, but rather less, than it now is. But the dry ashes would be of some value—sifted, the cinders might be sold for brick-burning ; and the dust would be good manure for heavy clay lands especially. I believe the dry ashes would be worth nearly as much per ton as the night-soil, and that the loss in disposing of it be much

less than at present. The removal of dry ashes from a town is not found, anywhere out of Lancashire, a formidable difficulty. Would it, if tried, be found so here? Allowing it to be true, that the objections urged against closets, really did attach to them; that they did waste water and did cause increased cost for the removal of refuse, their use ought, nevertheless, to be encouraged. It would be cheap for a town like Manchester to spend the largest sum stated to be the cost of their use, rather than forego the advantages of that great sanitary improvement. I am convinced that the foul air from the middens destroys many hundred lives, I believe above a thousand a year, and I have had very extensive opportunity of observation, and have not neglected it, and my opinion is confirmed by that of all who have made these subjects a special study.

The Poor Law medical officers of Manchester have certified to their belief, from long-continued experience, that the open ash-pits in overcrowded neighbourhoods have been the frequent causes of fevers and epidemics; and who can doubt that such causes must produce such effects? It is absolutely certain that the cost of the excessive sickness and death they occasion, the loss of time and diminution of productive power, and the privations and losses of those rendered destitute by their parents and husbands being destroyed, far exceeds any cost the removal of these poison-pits could possibly occasion. We will not, however, rest the case on that issue. The health, decency, and comfort of the poor, who are the mass of the population, are involved in this question. The lives of the poor, the pains of fatal disease, the privations of widowhood, the dangers of early orphanage, the agony of bereavement, are not to be set in competition with a few pence more or less of rate. The nuisance of these "admitted abominations," whether costly or profitable, must be abated; to allow of their continuance, shortening the lives, embittering the existence, diminishing the means, destroying the comfort, and degrading the morality of our people, is a crime towards man and a sin before God.